

## Media and behavior change: effectiveness of public health campaigns in Pakistan

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### ABSTRACT

**Objective:** To investigate the effectiveness of awareness campaigns by media regarding HIV/AIDS Prevention, Polio Vaccination, Breast Cancer and Family Planning in order to create the behavior change of the target audience in different cities of Pakistan.

**Study Design:** A quantitative survey research design

**Place and Duration:** The data was collected from people exposed to Public Health Campaigns launched from 5<sup>th</sup> September 2016 to 28<sup>th</sup> July 2017 comprising of HIV/AIDS (November-December, 2016), Polio Vaccination (February-March, 2017), Breast Cancer (September-October, 2016), and Family Planning campaigns (June-July, 2017) taken from all four provincial capitals including Lahore (Services Hospital, Lady Willingdon Hospital & Shaukat Khanum Cancer Hospital, Mayo Hospital, Polio Vaccination camps in walled city) Peshawar (Peshawar General Hospital, Lady Reading Hospital, Polio Vaccination camps in Hayatabad area), Karachi (Abbasi Shaheed Hospital, Aga Khan Hospital, Polio Vaccination camps in Nazaimbad and related areas), Quetta ( Civil Hospital, CMH, Quetta, Mid East Hospital, Polio Vaccination camps, Zarghoon Road area) and federal capital Islamabad (PIMS and Poly clinic, Polio Vaccination camps in G 6, 7 and 8 Sectors).

**Methodology:** Data was collected from 724 respondents to verify the relationship between the Public health awareness campaigns by media (HIV/AIDS Prevention, Polio Vaccination, Breast Cancer and Family Planning campaigns) in creating behavior change by applying Pearson Product Moment Correlation analysis and Multiple Regression Analysis.

**Results:** Media campaigns regarding behavior change for polio vaccination are more successful as these campaigns are explaining 28% variance in behavior change of target audience towards polio vaccination, whereas 25 % and 20 % variance in behavior change has been reflected by family planning and HIV/AIDS awareness campaign respectively, while campaigns regarding breast cancer awareness are not creating any behavior change among the target audience as the explained variance for behavior change regarding breast cancer due to media awareness campaign is 4%.

**Conclusion:** The effective message, individual and community levels of motivation have strong association with behavior change regarding HIV-AIDS prevention, Polio Vaccination and Family Planning but have weak association with Breast Cancer awareness campaigns. In addition to this, television is more effective medium in behavior change instead of print media.

**Keywords:** Media campaigns, Media behavior, Behavior change, Individual motivation, Community motivation, HIV/AIDS, Polio vaccination, Breast cancer, Family planning, Awareness.

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### INTRODUCTION

Media messages are labeled as ‘Social Vaccine’ in behavior change because awareness through mass media lead people to consult health service providers and creates general to specific awareness for the prevention of disease<sup>1</sup>. Media campaign can successfully raise health issues in high-risk population with a relatively low cost<sup>2-4</sup>. On the contrary some studies claims that interpersonal communication is still the efficient way in changing the behavior of target audience, while few studies suggest that the integration of both modes of communication are effective in creating behavior change<sup>5</sup>, hence there is no consensus found among health communication practitioners and scholars which communication strategy, either use of mass media or interpersonal communication, is more effective in creating change among general population’s behavior. In this new era of information technology, media is proliferating to a much larger extent so considering the role of mass media as a

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more effective medium in creating awareness is worth noticing to explore compared to other modes of communication. Theory of reasoned action (TRA) provided a theoretical framework to understand the individual behavioral intentions<sup>6</sup>. This theory highlights that intentions are prime agents for creating behavior change and these intentions are modified by focusing on attitudes towards risk reduction, response to social norms, vis-à-vis risky behavior. Another theoretical perspective that provides the basic conceptual framework is the Piotrow Model that refers behavior change as a complex process attained by employing following steps: Knowledge (Information and learning about a new behavior), Approval (Acceptance new behavior), Intention (Believes that behavior is a good one and decides to adopt the behavior), Practice (Start practicing the new behavior), and Advocacy (promoting the behavior and persuading others to change their behavior)<sup>7</sup>. Hence, the basic aim of this study is to explore change in behavior of the target audience due to media campaigns regarding HIV/AIDS Prevention, Polio Vaccination, Breast Cancer and Family Planning. Furthermore, the media campaign influence was accessed in terms of campaigns message construction and its influence in developing individual and community level of motivation in target audience regarding seeking awareness. So this study was conducted with an objective to investigate the effectiveness of awareness campaigns by media regarding HIV/AIDS Prevention, Polio Vaccination, Breast Cancer and Family Planning in order to create the behavior change of the target audience in different cities of Pakistan.

#### METHODOLOGY

The quantitative survey research design was employed using questionnaire that consisted of two components; media campaigns effectiveness and Behavior change. Media campaign effectiveness section is assessed using 17 items including 7 items for message construction, 5 items each for individual and community level of motivation. While behavior change was accessed using 30 items including questions accessing knowledge, approval, intention, practice and advocacy domains of behavior change. The data was collected from people exposed to Public Health Campaigns launched from 5<sup>th</sup> September 2016 to 28<sup>th</sup> July 2017 comprising HIV/AIDS (November-December, 2016), Polio Vaccination (February-March, 2017), Breast Cancer (September-October, 2016), and Family Planning campaigns (June-July, 2017) from all four provincial capitals including Lahore (Services Hospital, Lady Willingdon Hospital & Shaikat Khanum Cancer Hospital, Mayo Hospital, Polio Vaccination camps in walled city) Peshawar (Peshawar General Hospital, Lady Reading Hospital, Polio Vaccination camps Hayatabad area), Karachi (Abbasi Shaheed Hospital, Aga Khan Hospital, Polio Vaccination camps in Nazaimbad and related areas) and Quetta ( Civil Hospital, CMH, Quetta, Mid East Hospital, Polio Vaccination camp at Zarghoon Road area) and federal capital Islamabad (PIMS and Poly clinic, Polio Vaccination camps at G 6, 7 and 8 Sectors).

The total numbers of 724 questionnaires were gathered from

people exposed to respective media campaign including 430 (59.3%) males and 294 (40.6%) females within the age range of 18-60 years (M=28.34; SD=2.13). In inclusion criteria, only those participants were included who exposed to each campaign once. Moreover, those participants who are not exposed to campaign or not willing to participate in the study were excluded from study. An informed consent was taken from each participant to ensure the confidentiality of data. The questionnaires were developed both in English and in the Urdu languages where respondents had to answer using a 5 point Likert scale ranging from 1 to 5 (Strongly Disagree to Strongly Agree) to determine the effects of media campaign on the behavior change. The participants were informed about the nature and purpose of the study.

**Data Analysis:** Data analysis was done by using SPSS 21. Pearson Product Moment Correlation analysis was carried out for assessing the relationship between media and behavior change regarding public health awareness campaigns in Pakistan and Multiple Regression analysis provides the degree of change in the behavior as per knowledge, approval, intention, practice and advocacy, of the target audience.

#### RESULTS

**Table-I: Role of Media in Behavior Change regarding HIV/AIDS, Polio Vaccination, Breast Cancer and Family Planning Prevention Campaigns (N=724)**

HIV/AIDS Prevention Campaign (n=208)					
	2	3	4	M	SD
Behavior Change	.31**	.39**	.28**	3.71	.65
Message Construction	-	.28**	.61**	3.50	.99
Community Motivation		-	.36**	3.65	.98
Individual Motivation			-	3.22	1.15
Polio Vaccination Prevention Campaign (n=208)					
Behavior Change	.40**	.43**	.28**	3.78	.66
Measure Construction	-	.25**	.46**	3.37	1.09
Community Motivation		-	.30**	3.38	.94
Individual Motivation			-	3.37	1.19
Breast Cancer Prevention Campaign (n=100)					
Behavior Change	.16	.02	.17	3.50	.72
Measure Construction	-	.19*	.69**	2.95	1.21
Community Motivation		-	.46**	3.31	1.10
Individual Motivation			-	2.64	1.11
Family Planning Prevention Campaign (n=208)					
Behavior Change	.30**	.47**	.24**	3.50	.77
Measure Construction	-	.29**	.36**	3.46	1.09
Community Motivation		-	.40**	3.49	1.08
Individual Motivation			-	3.32	1.16

Note. \*p<.05, \*\*p<.01

In order to access the relationship between media campaigns efficacy and behavior change of audience, Pearson, Product Moment Correlation was computed and the findings were given in table I.

Above table indicates that there is a significant association among Behavior Change, Effective Message Construction and Community Level of Motivation regarding HIV/AIDS Prevention, Polio Vaccination, and Family Planning while relationship of media campaigns with behavior change regarding “Breast Cancer was non-significant. However, Individual Level of Motivation remains strongly associated with all other variables with high magnitude for Message Construction and Community Level Motivation respectively. Furthermore, Multiple Regression Analysis was conducted further and the findings are given in Table-II:

**Table-II: Multiple regression analysis in predicting behavior change in target audience (N=724).**

Variables	HIV/AIDS	Polio Vaccination	Breast Cancer	Family Planning
	$\beta$	$\beta$	$B$	$\beta$
BC	4.65***	3.32**	0.22	2.89**
MC	<b>2.60***</b>	3.63***	0.27	2.33*
CM	4.30***	4.80***	-1.11	5.95***
IM	0.47	0.45	2.88	0.35
Adjusted R <sup>2</sup>	0.20	0.28	0.04	0.25
F Value	4.65***	3.93***	0.12	3.89***

Note. \*p<.05; \*\*p<.01; \*\*\*p<.001; BC= Behavior Change; MC= Message Construction; CM= Community Motivation; IM= Individual Motivation

Results from the above table indicated that all media campaigns are successfully predicting the behavior change among target audience except media campaigns regarding Breast Cancer awareness in Pakistan.

Overall, campaign success analysis with behavior change parameters are given below

**Table-III: Campaign Success Analysis: Overall Behavior Change (N=724)**

Campaigns	N	Stages of Behavior Change					Mean
		Knowle dge	Appro val	Intentio n	Practic e	Advocac y	
HIV/AIDS	208	3.86	3.89	3.43	3.83	3.55	3.70
Polio Vaccination	208	3.90	3.90	3.54	3.96	3.56	3.77
Breast Cancer	100	3.00	2.80	2.75	2.85	2.95	2.87
Family Planning	208	3.59	3.46	3.41	3.54	3.45	3.49

Table-III depicts that polio vaccination campaign was highly successful in achieving its objective in Pakistan. To sum up, Table-III indicates that all communication campaigns except Brest Cancer were successful in bringing behavior change among target population.

**DISCUSSION**

This study highlighted the significance of media campaigns in creating behavior change among the target audience regarding HIV/AIDS, Polio Vaccination and Family Planning however, Breast Cancer awareness campaign by media was found to be non- significant.

Similarly, the study also indicated that the media campaign variables including Message construction, Individual and Community Level of motivation are strong associated with creating better knowledge, intention, planning and advocacy domains of behavior change. This study also endorses that it is important to understand the factor of individual decision making to make effective strategies<sup>8</sup>. Moreover, positive effect of media messages on community mobilization is also supported by other researcher<sup>9</sup>. It reveals that electronic media especially television is more effective medium in behavior change instead of print media<sup>10</sup>. In addition, it maintains that the target population preferred interpersonal communication messages in native (Local) languages in health promotion campaigns in Pakistan. Studies done in Philippine<sup>11</sup> and Nigeria<sup>12</sup> also showed the similar findings.

Interestingly, the results presented here for media campaigns effectiveness were similar to other types of public health campaigns. As a meta-analysis<sup>13</sup> of studies of mediated health campaigns in creating behavior change of the United States population revealed that mediated health campaigns have small measurable effects in the short-term campaigns. Moreover, the results also revealed that campaign effect sizes varied by the type of behavior; 0.15 for seat belt use, 0.13 for oral health, 0.09 for alcohol use reduction, 0.05 for heart disease prevention, 0.05 for smoking, 0.04 for mammography and cervical cancer screening, and .04 for sexual behaviors.

Every year, new public health campaigns has been designed to change the behavior of public regarding their health-related behavior efficacy, so the findings of the study provide valuable insights into the effectiveness of health campaigns to promote change in public behavior regarding the prevention of diseases<sup>14,15</sup>, as media has high reach to larger population.

Besides the study highlighted that effectiveness of media awareness campaigns, the breast cancer awareness campaigns have non-significant results, the possible reason for these non-significant results might be because the sample size of the target audience for the breast cancer awareness campaign is smaller than other campaigns, moreover, the researcher observes the non-compliance behavior of the women in this campaign in responding to the survey questionnaires. So, in future the more research participants are needed in this accessing the effectiveness of this campaign with more complying and responsible participants.

**CONCLUSION**

The effective message, individual and community levels of motivation have strong association with behavior change regarding HIV-AIDS prevention, Polio Vaccination and Family Planning but have weak association with Brest Cancer

awareness campaigns. In addition to this, television is more effective medium in behavior change instead of print media.

### CONTRIBUTION OF AUTHORS

**Hanan MA:** Conceived idea, Literature review,

**Saleem N:** Statistical analysis, Questionnaire development

**Khawar N:** Data collection, Manuscript writing

**Arshad A:** Data collection, Data analysis, Data interpretation

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